APPENDIX E
APRIL 2007 LABORATORY REPORT – EARTH TECH

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AIR WATER & SOIL LABORATORIES, INC.®
2109A North Hamilton Street • Richmond, Virginia 23230 • Tel: (804) 358-8295 Fax: (804) 358-8297

Certificate of Analysis

Final Report

Laboratory Order ID 07040278

Client Name: Earth Tech, Inc.- Richmond
7870 Villa Park Drive, Suite 400
Richmond, VA 23228

Date Received: April 20, 2007
Date Issued: April 23, 2007

Submitted To: Eric Hamilton

Project Number: 96095

Client Site I.D.: White Oak Village

Purchase Order: NA

Sample I.D.: Tank 1

Laboratory Sample I.D.: 07040278-001

Date/Time Sampled 04/20/07 10:00

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
Arsenic	SW6010B	< 0.01 mg/L	0.010	04/23/07 12:34	DMH
Barium	SW6010B	0.046 mg/L	0.010	04/23/07 12:34	DMH
Cadmium	SW6010B	< 0.01 mg/L	0.010	04/23/07 12:34	DMH
Chromium	SW6010B	0.045 mg/L	0.010	04/23/07 12:34	DMH
Lead	SW6010B	0.016 mg/L	0.010	04/23/07 12:34	DMH
Mercury	SW7470A	< 0.0002 mg/L	0.0002	04/23/07 10:54	CGT
Selenium	SW6010B	< 0.05 mg/L	0.050	04/23/07 12:34	DMH
Silver	SW6010B	< 0.01 mg/L	0.010	04/23/07 12:34	DMH
Dichlorodifluoromethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
Chloromethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
Vinyl chloride	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
Bromomethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
Chloroethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
Trichlorofluoromethane	SW8260B	2.1 ug/L	1.0	04/21/07 0:03	DMB
1,1-Dichloroethylene	SW8260B	13.4 ug/L	1.0	04/21/07 0:03	DMB
Acetone	SW8260B	28.4 ug/L	10.0	04/21/07 0:03	DMB
Iodomethane	SW8260B	< 10 ug/L	10.0	04/21/07 0:03	DMB
Carbon disulfide	SW8260B	< 10 ug/L	10.0	04/21/07 0:03	DMB
Methylene chloride	SW8260B	< 4 ug/L	4.0	04/21/07 0:03	DMB
trans-1,2-Dichloroethylene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
1,1-Dichloroethane	SW8260B	1.1 ug/L	1.0	04/21/07 0:03	DMB
Vinyl acetate	SW8260B	< 10 ug/L	10.0	04/21/07 0:03	DMB
2,2-Dichloropropane	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
cis-1,2-Dichloroethylene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
2-Butanone (MEK)	SW8260B	< 10 ug/L	10.0	04/21/07 0:03	DMB
Bromochloromethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
Chloroform	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
1,1,1-Trichloroethane	SW8260B	19.7 ug/L	1.0	04/21/07 0:03	DMB
Carbon tetrachloride	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
1,1-Dichloropropene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
Benzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB

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Purchase Order: NA

Sample I.D.: Tank 1
Laboratory Sample I.D.: 07040278-001
Date/Time Sampled 04/20/07 10:00

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
1,2-Dichloroethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
Trichloroethylene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
1,2-Dichloropropane	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
Dibromomethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
Bromodichloromethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
cis-1,3-Dichloropropene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
4-Methyl-2-pentanone (MIBK)	SW8260B	< 10 ug/L	10.0	04/21/07 0:03	DMB
Toluene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
trans-1,3-Dichloropropene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
1,1,2-Trichloroethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
Tetrachloroethylene (PCE)	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
1,3-Dichloropropane	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
2-Hexanone (MBK)	SW8260B	< 10 ug/L	10.0	04/21/07 0:03	DMB
Dibromochloromethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
1,2-Dibromoethane (EDB)	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
Chlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
1,1,1,2-Tetrachloroethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
Ethylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
m,p-Xylenes	SW8260B	< 2 ug/L	2.0	04/21/07 0:03	DMB
o-Xylene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
Xylenes, Total	SW8260B	< 3 ug/L	3.0	04/21/07 0:03	DMB
Styrene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
Bromoform	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
Isopropylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
Bromobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
1,1,2,2-Tetrachloroethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
1,2,3-Trichloropropane	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
n-Propylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
2-Chlorotoluene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
4-Chlorotoluene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
1,3,5-Trimethylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
tert-Butylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB

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Project Number: 96095

Client Site I.D.: White Oak Village

Purchase Order: NA

Sample I.D.: Tank 1

Laboratory Sample I.D.: 07040278-001

Date/Time Sampled 04/20/07 10:00

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
1,2,4-Trimethylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
sec-Butylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
1,3-Dichlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
p-Isopropyltoluene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
1,4-Dichlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
1,2-Dichlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
n-Butylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
1,2-Dibromo-3-chloropropane (DBCP)	SW8260B	< 4 ug/L	4.0	04/21/07 0:03	DMB
1,2,4-Trichlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
Hexachlorobutadiene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
Naphthalene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
1,2,3-Trichlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB
MTBE	SW8260B	< 1 ug/L	1.0	04/21/07 0:03	DMB

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Date Received: April 20, 2007
Date Issued: April 23, 2007

Submitted To: Eric Hamilton

Project Number: 96095

Client Site I.D.: White Oak Village

Purchase Order: NA

Sample I.D.: Tank 2

Laboratory Sample I.D.: 07040278-002

Date/Time Sampled 04/20/07 13:40

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
Arsenic	SW6010B	< 0.01 mg/L	0.010	04/23/07 12:42	DMH
Barium	SW6010B	0.060 mg/L	0.010	04/23/07 12:42	DMH
Cadmium	SW6010B	< 0.01 mg/L	0.010	04/23/07 12:42	DMH
Chromium	SW6010B	0.062 mg/L	0.010	04/23/07 12:42	DMH
Lead	SW6010B	0.033 mg/L	0.010	04/23/07 12:42	DMH
Mercury	SW7470A	< 0.0002 mg/L	0.0002	04/23/07 10:57	CGT
Selenium	SW6010B	< 0.05 mg/L	0.050	04/23/07 12:42	DMH
Silver	SW6010B	< 0.01 mg/L	0.010	04/23/07 12:42	DMH
Dichlorodifluoromethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
Chloromethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
Vinyl chloride	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
Bromomethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
Chloroethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
Trichlorofluoromethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
1,1-Dichloroethylene	SW8260B	14.6 ug/L	1.0	04/21/07 0:29	DMB
Acetone	SW8260B	19.6 ug/L	10.0	04/21/07 0:29	DMB
Iodomethane	SW8260B	< 10 ug/L	10.0	04/21/07 0:29	DMB
Carbon disulfide	SW8260B	< 10 ug/L	10.0	04/21/07 0:29	DMB
Methylene chloride	SW8260B	4.4 ug/L	4.0	04/21/07 0:29	DMB
trans-1,2-Dichloroethylene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
1,1-Dichloroethane	SW8260B	8.0 ug/L	1.0	04/21/07 0:29	DMB
Vinyl acetate	SW8260B	< 10 ug/L	10.0	04/21/07 0:29	DMB
2,2-Dichloropropane	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
cis-1,2-Dichloroethylene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
2-Butanone (MEK)	SW8260B	< 10 ug/L	10.0	04/21/07 0:29	DMB
Bromochloromethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
Chloroform	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
1,1,1-Trichloroethane	SW8260B	[illegible] ug/L	1.0	04/21/07 0:29	DMB
Carbon tetrachloride	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
1,1-Dichloropropene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
Benzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB

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Project Number: 96095

Client Site I.D.: White Oak Village

Purchase Order: NA

Sample I.D.: Tank 2

Laboratory Sample I.D.: 07040278-002

Date/Time Sampled 04/20/07 13:40

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
1,2-Dichloroethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
Trichloroethylene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
1,2-Dichloropropane	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
Dibromomethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
Bromodichloromethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
cis-1,3-Dichloropropene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
4-Methyl-2-pentanone (MIBK)	SW8260B	< 10 ug/L	10.0	04/21/07 0:29	DMB
Toluene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
trans-1,3-Dichloropropene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
1,1,2-Trichloroethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
Tetrachloroethylene (PCE)	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
1,3-Dichloropropane	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
2-Hexanone (MBK)	SW8260B	< 10 ug/L	10.0	04/21/07 0:29	DMB
Dibromochloromethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
1,2-Dibromoethane (EDB)	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
Chlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
1,1,1,2-Tetrachloroethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
Ethylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
m,p-Xylenes	SW8260B	< 2 ug/L	2.0	04/21/07 0:29	DMB
o-Xylene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
Xylenes, Total	SW8260B	< 3 ug/L	3.0	04/21/07 0:29	DMB
Styrene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
Bromoform	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
Isopropylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
Bromobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
1,1,2,2-Tetrachloroethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
1,2,3-Trichloropropane	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
n-Propylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
2-Chlorotoluene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
4-Chlorotoluene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
1,3,5-Trimethylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
tert-Butylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB

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Purchase Order: NA

Sample I.D.: Tank 2

Laboratory Sample I.D.: 07040278-002

Date/Time Sampled 04/20/07 13:40

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
1,2,4-Trimethylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
sec-Butylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
1,3-Dichlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
p-Isopropyltoluene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
1,4-Dichlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
1,2-Dichlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
n-Butylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
1,2-Dibromo-3-chloropropane (DBCP)	SW8260B	< 4 ug/L	4.0	04/21/07 0:29	DMB
1,2,4-Trichlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
Hexachlorobutadiene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
Naphthalene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
1,2,3-Trichlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB
MTBE	SW8260B	< 1 ug/L	1.0	04/21/07 0:29	DMB

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Purchase Order: NA

Sample I.D.: Tank 3

Laboratory Sample I.D.: 07040278-003

Date/Time Sampled 04/20/07 13:15

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
Arsenic	SW6010B	< 0.01 mg/L	0.010	04/23/07 12:45	DMH
Barium	SW6010B	0.156 mg/L	0.010	04/23/07 12:45	DMH
Cadmium	SW6010B	< 0.01 mg/L	0.010	04/23/07 12:45	DMH
Chromium	SW6010B	0.126 mg/L	0.010	04/23/07 12:45	DMH
Lead	SW6010B	0.234 mg/L	0.010	04/23/07 12:45	DMH
Mercury	SW7470A	0.0002 mg/L	0.0002	04/23/07 10:59	CGT
Selenium	SW6010B	< 0.05 mg/L	0.050	04/23/07 12:45	DMH
Silver	SW6010B	< 0.01 mg/L	0.010	04/23/07 12:45	DMH
Dichlorodifluoromethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
Chloromethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
Vinyl chloride	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
Bromomethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
Chloroethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
Trichlorofluoromethane	SW8260B	3.1 ug/L	1.0	04/21/07 0:55	DMB
1,1-Dichloroethylene	SW8260B	19.0 ug/L	1.0	04/21/07 0:55	DMB
Acetone	SW8260B	31.6 ug/L	10.0	04/21/07 0:55	DMB
Iodomethane	SW8260B	< 10 ug/L	10.0	04/21/07 0:55	DMB
Carbon disulfide	SW8260B	< 10 ug/L	10.0	04/21/07 0:55	DMB
Methylene chloride	SW8260B	4.7 ug/L	4.0	04/21/07 0:55	DMB
trans-1,2-Dichloroethylene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
1,1-Dichloroethane	SW8260B	8.4 ug/L	1.0	04/21/07 0:55	DMB
Vinyl acetate	SW8260B	< 10 ug/L	10.0	04/21/07 0:55	DMB
2,2-Dichloropropane	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
cis-1,2-Dichloroethylene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
2-Butanone (MEK)	SW8260B	< 10 ug/L	10.0	04/21/07 0:55	DMB
Bromochloromethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
Chloroform	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
1,1,1-Trichloroethane	SW8260B	83.1 ug/L	1.0	04/21/07 0:55	DMB
Carbon tetrachloride	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
1,1-Dichloropropene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
Benzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB

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Purchase Order: NA

Sample I.D.: Tank 3

Laboratory Sample I.D.: 07040278-003

Date/Time Sampled 04/20/07 13:15

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
1,2-Dichloroethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
Trichloroethylene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
1,2-Dichloropropane	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
Dibromomethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
Bromodichloromethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
cis-1,3-Dichloropropene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
4-Methyl-2-pentanone (MIBK)	SW8260B	< 10 ug/L	10.0	04/21/07 0:55	DMB
Toluene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
trans-1,3-Dichloropropene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
1,1,2-Trichloroethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
Tetrachloroethylene (PCE)	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
1,3-Dichloropropane	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
2-Hexanone (MBK)	SW8260B	< 10 ug/L	10.0	04/21/07 0:55	DMB
Dibromochloromethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
1,2-Dibromoethane (EDB)	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
Chlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
1,1,1,2-Tetrachloroethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
Ethylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
m,p-Xylenes	SW8260B	< 2 ug/L	2.0	04/21/07 0:55	DMB
o-Xylene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
Xylenes, Total	SW8260B	< 3 ug/L	3.0	04/21/07 0:55	DMB
Styrene	SW8260B	1.3 ug/L	1.0	04/21/07 0:55	DMB
Bromoform	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
Isopropylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
Bromobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
1,1,2,2-Tetrachloroethane	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
1,2,3-Trichloropropane	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
n-Propylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
2-Chlorotoluene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
4-Chlorotoluene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
1,3,5-Trimethylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
tert-Butylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB

AIR WATER & SOIL LABORATORIES, INC.
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Certificate of Analysis

Final Report

Laboratory Order ID 07040278

Client Name: Earth Tech, Inc.- Richmond
7870 Villa Park Drive, Suite 400
Richmond, VA 23228

Date Received: April 20, 2007
Date Issued: April 23, 2007

Submitted To: Eric Hamilton
Project Number: 96095

Client Site I.D.: White Oak Village
Purchase Order: NA

Sample I.D.: Tank 3
Laboratory Sample I.D.: 07040278-003
Date/Time Sampled 04/20/07 13:15

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
1,2,4-Trimethylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
sec-Butylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
1,3-Dichlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
p-Isopropyltoluene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
1,4-Dichlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
1,2-Dichlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
n-Butylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
1,2-Dibromo-3-chloropropane (DBCP)	SW8260B	< 4 ug/L	4.0	04/21/07 0:55	DMB
1,2,4-Trichlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
Hexachlorobutadiene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
Naphthalene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
1,2,3-Trichlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB
MTBE	SW8260B	< 1 ug/L	1.0	04/21/07 0:55	DMB

AIR WATER & SOIL Laboratories, Inc.

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RICHMOND, VIRGINIA 23230
(804) 358-8295 PHONE
(804)358-8297 FAX

P.21

8046723305

CHAIN OF CUSTODY

PAGE 1 OF 2

CLIENT NAME: Earth Tech
CLIENT CONTACT: Eric Hamilton
CLIENT ADDRESS: 7870 Villa Park
CLIENT PHONE NUMBER: (804) 515-8414
CLIENT FAX NUMBER: 515 8308

PROJECT NAME: White Oak Village
SITE NAME: White Oak Village
PROJECT NUMBER: 96095
P.O. NUMBER:
REGULATORY AUTHORITY:

sample for compliance reporting? YES (NO)
Is sample from a chlorinated supply? YES (NO)
PWS#

SAMPLER NAME (PRINT): Eric Hamilton
SAMPLER SIGNATURE: Eric Hamilton
Turn Around Time: 1 Day(s)

CLIENT SAMPLE I.D.	Date Sampled	Time Sampled	Number of Containers	Grab	Composite	Field Filtered (Dissolved Metals)	MATRIX: Ground Water / Surface Water	Waste Water / Storm Water	Drinking Water	Soil	Solids	Other	ANALYSIS: 8260	RCRA 8 metals	RCRA 8 metals (Hold for TCLP)	COMMENTS
1) Tank 1	4/20/07	1000	4	X			X						X	X		
2) Tank 2	4/20/07	1340	4	X			X						X	X		
3) Tank 3	4/20/07	1315	4	X			X						X	X		
4) Trench 1	4/20/07	1402	4	X			X						X	X		
5) Trench 2	4/20/07	1340	4	X			X						X	X		
6) Trench 3	4/20/07	1413	4	X			X						X	X		
7) Trench 1-A	4/20/07	1402	1	X							X				X	
8) Trench 2-A	4/20/07	1340	1	X							X				X	
9) Trench 3-A	4/20/07	1413	1	X							X				X	
10) Staging 1	4/20/07	1420	1		X					X					X	

ETI-R
White Oak Village
07040278
DUE: Next Day
Recd: 04/20/07

RELINQUISHED	DATE / TIME	RECEIVED	DATE / TIME
Eric Hamilton	4/20/07/1502	Eric Hamilton	4-20-07 / 1503
Eric Hamilton	4-20-07/1525	[signature]	4/20/07 1525

LAB USE ONLY COOLER TEMP °C 4°C

F.G. PRUITT INC.
APR-25-2007 07:32

P.22

8045723305

F.G. PRUITT INC.

APR-25-2007 07:32

AIR WATER & SOIL Laboratories, Inc.

2109A NORTH HAMILTON STREE
RICHMOND, VIRGINIA 23231
(804) 358-8295 PHONE
(804)358-8297 FAX

CHAIN OF CUSTODY

PAGE 2 OF 2

CLIENT NAME: Earth Tech
CLIENT CONTACT: Eric Hamilton
CLIENT ADDRESS: 7870 Villa Park
CLIENT PHONE NUMBER: 804 515-8914
CLIENT FAX NUMBER: 515-8308

PROJECT NAME: White Oak Village
SITE NAME: White Oak Village
PROJECT NUMBER: 96095.
P.O. NUMBER:
REGULATORY AUTHORITY:

Is sample for compliance reporting? YES (NO)
Is sample from a chlorinated supply? YES (NO)
PWS#

SAMPLER NAME (PRINT): Eric Hamilton
SAMPLER SIGNATURE: Eric Hamilton
Turn Around Time: 1 Day(s)

CLIENT SAMPLE I.D.	Date Sampled	Time Sampled	Number of Containers	Grab	Composite	Field Filtered (Dissolved Metals)	MATRIX: Ground Water / Surface Water	Waste Water / Storm Water	Drinking Water	Soil	Solids	Other	ANALYSIS	COMMENTS: PLEASE NOTE PRESERVATIVE(S)
1) Trip	4/20/07		2											
2) Temp Blank														
3)														
4)														
5)														
6)														
7)														
8)														
9)														
10)														

ETI-R 07040278
White Oak Village
DUE: Next Day
Recd: 04/20/07

RELINQUISHED:	DATE / TIME	RECEIVED:	DATE / TIME
Eric Hamilton	4/20/07/1502	Eric Hart	4-20-07/1503
Eric Hart	4-20-07/1525	[signature]	4/20/07 1525
RELINQUISHED:	DATE / TIME	RECEIVED:	DATE / TIME

LAB USE ONLY COOLER TEMP °C 4°C

ETI-R
White Oak Village

07040278
DUE: Next Day
Recd: 04/20/07

Sample Conditions Checklist

Opened by: (print) _____ Lab ID No.: _____

Date Cooler Opened: ~~RECEIVED~~ (sign) _____

APR 20 2007

		YES	NO	N/A
1.	Were custody seals on outside of cooler?	☑	☐	☐
2.	Were custody seals unbroken and intact at the date and time of arrival?	☑	☐	☐
3	Was the project identifiable from custody papers and were the custody papers filled out completely and correctly?	☑	☐	☐
4.	Did all bottle labels agree with custody papers?	☑	☐	☐
5.	Was cooler recieved on ice?	☑	☐	☐
6.	If yes, was their a temperature blank and was the temperature less than 4 degrees Celsius?	☑	☐	☐
7.	Was temperature check within acceptable limits?	☑	☐	☐
8.	Were all samples within holding time for requested tests?	☑	☐	☐
9.	Are all samples in propper bottles with appropriate preservative for the analysis requested?	☑	☐	☐
10.	Are all volatile organic bottles free of headspace?	☑	☐	☐

COMMENTS

11 Trench 3" water - not rec'd
Containment - NO sample - Eric Hamilton 4/20/07 1630

TOTAL P.23

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Certificate of Analysis

Final Report

Laboratory Order ID 07040278

Client Name: Earth Tech, Inc.- Richmond
7870 Villa Park Drive, Suite 400
Richmond, VA 23228

Date Received: April 20, 2007
Date Issued: April 23, 2007

Submitted To: Eric Hamilton
Client Site I.D.: White Oak Village

Project Number: 96095
Purchase Order: NA

Sample I.D.: Trench 2
Date/Time Sampled 04/20/07 13:10

Laboratory Sample I.D.: 07040278-005

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
1,2,4-Trimethylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 1:46	DMB
sec-Butylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 1:46	DMB
1,3-Dichlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 1:46	DMB
p-Isopropyltoluene	SW8260B	< 1 ug/L	1.0	04/21/07 1:46	DMB
1,4-Dichlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 1:46	DMB
1,2-Dichlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 1:46	DMB
n-Butylbenzene	SW8260B	< 1 ug/L	1.0	04/21/07 1:46	DMB
1,2-Dibromo-3-chloropropane (DBCP)	SW8260B	< 4 ug/L	4.0	04/21/07 1:46	DMB
1,2,4-Trichlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 1:46	DMB
Hexachlorobutadiene	SW8260B	< 1 ug/L	1.0	04/21/07 1:46	DMB
Naphthalene	SW8260B	< 1 ug/L	1.0	04/21/07 1:46	DMB
1,2,3-Trichlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/07 1:46	DMB
MTBE	SW8260B	< 1 ug/L	1.0	04/21/07 1:46	DMB

Sample I.D.: Trench 1-A
Date/Time Sampled 04/20/07 14:02

Laboratory Sample I.D.: 07040278-007

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
Arsenic	SW6010B	< 0.774 mg/kg	0.774	04/23/07 11:57	DMH
Barium	SW6010B	43.1 mg/kg	0.774	04/23/07 11:32	DMH
Cadmium	SW6010B	3.74 mg/kg	0.774	04/23/07 11:32	DMH
Chromium	SW6010B	41.2 mg/kg	0.774	04/23/07 11:32	DMH
Lead	SW6010B	388 mg/kg	0.774	04/23/07 11:32	DMH
Mercury	SW7471A	0.091 mg/kg	0.012	04/23/07 11:16	CGT
Selenium	SW6010B	< 3.87 mg/kg	3.87	04/23/07 11:32	DMH
Silver	SW6010B	1.44 mg/kg	0.774	04/23/07 11:32	DMH
Percent Moisture	SM2540G	35.4 %	0.1	04/23/07 10:35	TER

All soil sample results have been reported on a dry weight basis.

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Certificate of Analysis

Final Report

Laboratory Order ID 07040278

Client Name: Earth Tech, Inc.- Richmond
7870 Villa Park Drive, Suite 400
Richmond, VA 23228

Date Received: April 20, 2007
Date Issued: April 23, 2007

Submitted To: Eric Hamilton

Project Number: 96095

Client Site I.D.: White Oak Village

Purchase Order: NA

Sample I.D.: Trench 2-A
Laboratory Sample I.D.: 07040278-008
Date/Time Sampled 04/20/07 13:40

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
Arsenic	SW6010B	7.05 mg/kg	0.743	04/23/07 11:40	DMH
Barium	SW6010B	95.3 mg/kg	0.743	04/23/07 11:40	DMH
Cadmium	SW6010B	6.48 mg/kg	0.743	04/23/07 11:40	DMH
Chromium	SW6010B	198 mg/kg	0.743	04/23/07 11:40	DMH
Lead	SW6010B	821 mg/kg	0.743	04/23/07 11:40	DMH
Mercury	SW7471A	0.241 mg/kg	0.012	04/23/07 11:18	CGT
Selenium	SW6010B	< 3.72 mg/kg	3.72	04/23/07 11:40	DMH
Silver	SW6010B	7.35 mg/kg	0.743	04/23/07 11:40	DMH
Percent Moisture	SM2540G	32.7 %	0.1	04/23/07 10:35	TER

All soil sample results have been reported on a dry weight basis.

Sample I.D.: Trench 3-A
Laboratory Sample I.D.: 07040278-009
Date/Time Sampled 04/20/07 14:13

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
Arsenic	SW6010B	5.68 mg/kg	0.790	04/23/07 11:43	DMH
Barium	SW6010B	57.8 mg/kg	0.790	04/23/07 11:43	DMH
Cadmium	SW6010B	6.29 mg/kg	0.790	04/23/07 11:43	DMH
Chromium	SW6010B	70.2 mg/kg	0.790	04/23/07 11:43	DMH
Lead	SW6010B	612 mg/kg	0.790	04/23/07 11:43	DMH
Mercury	SW7471A	0.143 mg/kg	0.013	04/23/07 11:21	CGT
Selenium	SW6010B	< 3.95 mg/kg	3.95	04/23/07 11:43	DMH
Silver	SW6010B	3.60 mg/kg	0.790	04/23/07 11:43	DMH
Percent Moisture	SM2540G	36.7 %	0.1	04/23/07 10:35	TER

All soil sample results have been reported on a dry weight basis.

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Certificate of Analysis

Final Report

Laboratory Order ID 07040278

Client Name: Earth Tech, Inc.- Richmond
7870 Villa Park Drive, Suite 400
Richmond, VA 23228

Date Received: April 20, 2007
Date Issued: April 23, 2007

Submitted To: Eric Hamilton

Project Number: 96095

Client Site I.D.: White Oak Village

Purchase Order: NA

Sample I.D.: Staging 1

Laboratory Sample I.D.: 07040278-010

Date/Time Sampled 04/20/07 14:20

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
Arsenic	SW6010B	1.67 mg/kg	0.841	04/23/07 11:59	DMH
Barium	SW6010B	62.1 mg/kg	0.841	04/23/07 11:46	DMH
Cadmium	SW6010B	1.99 mg/kg	0.841	04/23/07 11:46	DMH
Chromium	SW6010B	25.6 mg/kg	0.841	04/23/07 11:46	DMH
Lead	SW6010B	53.0 mg/kg	0.841	04/23/07 11:46	DMH
Mercury	SW7471A	0.041 mg/kg	0.013	04/23/07 11:23	CGT
Selenium	SW6010B	< 4.2 mg/kg	4.20	04/23/07 11:46	DMH
Silver	SW6010B	< 0.841 mg/kg	0.841	04/23/07 11:46	DMH
Percent Moisture	SM2540G	40.5 %	0.1	04/23/07 10:35	TER

All soil sample results have been reported on a dry weight basis.

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AIR WATER & SOIL Laboratories, Inc

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RICHMOND, VIRGINIA 23230
(804) 358-8295 PHONE
(804)358-8297 FAX

CHAIN OF CUSTODY

PAGE 1 OF 2

8046723305

CLIENT NAME: Earth Tech
CLIENT CONTACT: Eric Hamilton
CLIENT ADDRESS: 7870 Villa Park
CLIENT PHONE NUMBER: (804) 515-8414
CLIENT FAX NUMBER: 515 8308

PROJECT NAME: White Oak Village
SITE NAME: White Oak Village
PROJECT NUMBER: 96095
P.O. NUMBER:
REGULATORY AUTHORITY:

sample for compliance reporting? YES (NO)
Is sample from a chlorinated supply? YES (NO)
PWS#

SAMPLER NAME (PRINT): Eric Hamilton
SAMPLER SIGNATURE: Eric Hamilton
Turn Around Time: 1 Day(s)

CLIENT SAMPLE I.D.	Date Sampled	Time Sampled	Number of Containers	Grab	Composite	Field Filtered (Dissolved Metals)	MATRIX: Ground Water / Surface Water	Waste Water / Storm Water	Drinking Water	Soil	Solids	Other	ANALYSIS: 8260	RCRA 8 metals	RCRA 8 metals (Hold for TCLP)	COMMENTS: PLEASE NOTE PRESERVATIVE(S)
1) Tank 1	4/20/07	1000	4	X			X						X	X		
2) Tank 2	4/20/07	1340	4	X			X						X	X		
3) Tank 3	4/20/07	1315	4	X			X						X	X		
4) Trench 1	4/20/07	1402	4	X			X						X	X		
5) Trench 2	4/20/07	1340	4	X			X						X	X		
6) Trench 3	4/20/07	1413	4	X			X						X	X		
7) Trench 1-A	4/20/07	1403	1	X							X				X	
8) Trench 2-A	4/20/07	1340	1	X							X				X	
9) Trench 3-A	4/20/07	1413	1	X							X				X	
10) Staging 1	4/20/07	1420	1		X					X					X	

ETI-R
White Oak Village
07040278
DUE: Next Day
Recd: 04/20/07

RELINQUISHED	DATE / TIME	RECEIVED	DATE / TIME
Eric Hamilton	4/20/07/1502		4-20-07 / 1505
	4-20-07/1525		4/20/07 1525

LAB USE ONLY
COOLER TEMP °C 4°C

F.G. PRUITT INC.
APR-25-2007 07:32

P.22

8046723305

AIR WATER & SOIL Laboratories, Inc.
2109A NORTH HAMILTON STREE
RICHMOND, VIRGINIA 2323
(804) 358-8295 PHONE
(804)358-8297 FA

CHAIN OF CUSTODY

PAGE 2 OF 2

CLIENT NAME: Earth Tech
CLIENT CONTACT: Eric Hamilton
CLIENT ADDRESS: 7870 Villa Park
CLIENT PHONE NUMBER: 804 515-8914
CLIENT FAX NUMBER: 515-8308

PROJECT NAME: White Oak Village
SITE NAME: White Oak Village
PROJECT NUMBER: 96095.
P.O. NUMBER:
REGULATORY AUTHORITY:

Is sample for compliance reporting? YES (NO)
Is sample from a chlorinated supply? YES (NO)
PWS#

SAMPLER NAME (PRINT): Eric Hamilton
SAMPLER SIGNATURE: Eric Hamilton
Turn Around Time: 1 Day(s)

CLIENT SAMPLE I.D.	Date Sampled	Time Sampled	Number of Containers	Grab	Composite	Field Filtered (Dissolved Metals)	MATRIX: Ground Water / Surface Water	Waste Water / Storm Water	Drinking Water	Soil	Solids	Other	ANALYSIS	COMMENTS: PLEASE NOTE PRESERVATIVE(S)
1) Trip	4/20/07		2											
2) Temp Blank														
3)														
4)														
5)														
6)														
7)														
8)														
9)														
10)														

ETI-R 07040278
White Oak Village
DUE: Next Day
Recd: 04/20/07

RELINQUISHED:	DATE / TIME	RECEIVED:	DATE / TIME
Eric Hamilton	4/20/07/1502	Eric Stark	4-20-07/1503
Eric Stark	4-20-07/1525	[signature]	4/20/07 1525
RELINQUISHED:	DATE / TIME	RECEIVED:	DATE / TIME

LAB USE ONLY COOLER TEMP °C 4°C

F.G. PRUITT INC.
APR-25-2007 07:32

ETI-R
White Oak Village

07040278
DUE: Next Day
Recd: 04/20/07

Sample Conditions Checklist

Opened by: (print) _____ Lab ID No.: _____

Date Cooler Opened: ~~RECEIVED~~ (sign) _____

APR 2 0 2007

		YES	NO	N/A
1.	Were custody seals on outside of cooler?	☑	☐	☐
2.	Were custody seals unbroken and intact at the date and time of arrival?	☑	☐	☐
3.	Was the project identifiable from custody papers and were the custody papers filled out completely and correctly?	☑	☐	☐
4.	Did all bottle labels agree with custody papers?	☑	☐	☐
5.	Was cooler recieved on ice?	☑	☐	☐
6.	If yes, was their a temperature blank and was the temperature less than 4 degrees Celsius?	☑	☐	☐
7.	Was temperature check within acceptable limits?	☑	☐	☐
8.	Were all samples within holding time for requested tests?	☑	☐	☐
9.	Are all samples in proper bottles with appropriate preservative for the analysis requested?	☑	☐	☐
10.	Are all volatile organic bottles free of headspace?	☑	☐	☐

COMMENTS

11 <Trench 3" water - not rec'd
Contained - NO sample - Eric Hamilton 4/20/07 1630

TOTAL P.23

APPENDIX F
APRIL 2007 LABORATORY REPORT – SCHNABEL

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Certificate of Analysis

Final Report

Laboratory Order ID 07040282

Client Name: Schnabel Engineering South, LLC
1 West Cary Street
Richmond, VA 23220

Date Received: April 20, 2007
Date Issued: April 24, 2007

Submitted To: Steve Pond
Client Site I.D.: Former Via Systems

Project Number: NA
Purchase Order: NA

Sample I.D.: Trench 1 Comp / Laburnum Ave.
Date/Time Sampled 04/20/07 16:00

Laboratory Sample I.D.: 07040282-001

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
Arsenic	SW6010B	0.928 mg/kg	0.752	04/24/07 10:50	DMH
Barium	SW6010B	74.2 mg/kg	0.752	04/24/07 10:50	DMH
Cadmium	SW6010B	5.58 mg/kg	0.752	04/24/07 10:50	DMH
Chromium	SW6010B	94.8 mg/kg	0.752	04/24/07 10:50	DMH
Lead	SW6010B	410 mg/kg	0.752	04/24/07 10:50	DMH
Mercury	SW7471A	0.082 mg/kg	0.012	04/23/07 14:25	CGT
Selenium	SW6010B	< 3.76 mg/kg	3.76	04/24/07 10:50	DMH
Silver	SW6010B	2.57 mg/kg	0.752	04/24/07 10:50	DMH
Dichlorodifluoromethane	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Chloromethane	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Vinyl chloride	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Bromomethane	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Chloroethane	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Trichlorofluoromethane	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
1,1-Dichloroethylene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Acetone	SW8260B	181 ug/kg	75.2	04/23/07 17:50	DMB
Iodomethane	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Carbon disulfide	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Methylene chloride	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
trans-1,2-Dichloroethylene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
1,1-Dichloroethane	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Vinyl acetate	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
2,2-Dichloropropane	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
cis-1,2-Dichloroethylene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
2-Butanone (MEK)	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Bromochloromethane	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Chloroform	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
1,1,1-Trichloroethane	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Carbon tetrachloride	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
1,1-Dichloropropene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Benzene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB

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Certificate of Analysis

Final Report

Laboratory Order ID 07040282

Client Name: Schnabel Engineering South, LLC
1 West Cary Street
Richmond, VA 23220

Date Received: April 20, 2007
Date Issued: April 24, 2007

Submitted To: Steve Pond
Project Number: NA

Client Site I.D.: Former Via Systems
Purchase Order: NA

Sample I.D.: Trench 1 Comp / Laburnum Ave.
Laboratory Sample I.D.: 07040282-001
Date/Time Sampled 04/20/07 16:00

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
1,2-Dichloroethane	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Trichloroethylene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
1,2-Dichloropropane	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Dibromomethane	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Bromodichloromethane	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
cis-1,3-Dichloropropene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
4-Methyl-2-pentanone (MIBK)	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Toluene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
trans-1,3-Dichloropropene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
1,1,2-Trichloroethane	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Tetrachloroethylene (PCE)	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
1,3-Dichloropropane	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
2-Hexanone (MBK)	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Dibromochloromethane	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
1,2-Dibromoethane (EDB)	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Chlorobenzene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
1,1,1,2-Tetrachloroethane	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Ethylbenzene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
m,p-Xylenes	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
o-Xylene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Xylenes, Total	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Styrene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Bromoform	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Isopropylbenzene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Bromobenzene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
1,1,2,2-Tetrachloroethane	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
1,2,3-Trichloropropane	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
n-Propylbenzene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
2-Chlorotoluene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
4-Chlorotoluene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
1,3,5-Trimethylbenzene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
tert-Butylbenzene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB

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Certificate of Analysis

Final Report

Laboratory Order ID 07040282

Client Name: Schnabel Engineering South, LLC
1 West Cary Street
Richmond, VA 23220

Date Received: April 20, 2007
Date Issued: April 24, 2007

Submitted To: Steve Pond
Project Number: NA

Client Site I.D.: Former Via Systems
Purchase Order: NA

Sample I.D.: Trench 1 Comp / Laburnum Ave.
Laboratory Sample I.D.: 07040282-001
Date/Time Sampled 04/20/07 16:00

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
1,2,4-Trimethylbenzene	SW8260B	104 ug/kg	75.2	04/23/07 17:50	DMB
sec-Butylbenzene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
1,3-Dichlorobenzene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
p-Isopropyltoluene	SW8260B	83.5 ug/kg	75.2	04/23/07 17:50	DMB
1,4-Dichlorobenzene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
1,2-Dichlorobenzene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
n-Butylbenzene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
1,2-Dibromo-3-chloropropane (DBCP)	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
1,2,4-Trichlorobenzene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Hexachlorobutadiene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Naphthalene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
1,2,3-Trichlorobenzene	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
MTBE	SW8260B	< 75.2 ug/kg	75.2	04/23/07 17:50	DMB
Percent Moisture	SM2540G	33.5 %	0.1	04/23/07 10:35	TER

Results have been calculated on a dry weight basis.

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Certificate of Analysis

Final Report

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Client Name: Schnabel Engineering South, LLC
1 West Cary Street
Richmond, VA 23220

Date Received: April 20, 2007
Date Issued: April 24, 2007

Submitted To: Steve Pond

Project Number: NA

Client Site I.D.: Former Via Systems

Purchase Order: NA

Sample I.D.: Trench 2 Comp / Laburnum Ave.

Laboratory Sample I.D.: 07040282-002

Date/Time Sampled 04/20/07 16:37

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
Arsenic	SW6010B	5.15 mg/kg	0.729	04/24/07 10:52	DMH
Barium	SW6010B	92.2 mg/kg	0.729	04/24/07 10:52	DMH
Cadmium	SW6010B	5.40 mg/kg	0.729	04/24/07 10:52	DMH
Chromium	SW6010B	70.3 mg/kg	0.729	04/24/07 10:52	DMH
Lead	SW6010B	470 mg/kg	0.729	04/24/07 10:52	DMH
Mercury	SW7471A	0.251 mg/kg	0.012	04/23/07 14:45	CGT
Selenium	SW6010B	< 3.64 mg/kg	3.64	04/24/07 10:52	DMH
Silver	SW6010B	5.58 mg/kg	0.729	04/24/07 10:52	DMH
Dichlorodifluoromethane	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Chloromethane	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Vinyl chloride	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Bromomethane	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Chloroethane	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Trichlorofluoromethane	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
1,1-Dichloroethylene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Acetone	SW8260B	94.7 ug/kg	72.9	04/23/07 16:32	DMB
Iodomethane	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Carbon disulfide	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Methylene chloride	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
trans-1,2-Dichloroethylene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
1,1-Dichloroethane	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Vinyl acetate	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
2,2-Dichloropropane	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
cis-1,2-Dichloroethylene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
2-Butanone (MEK)	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Bromochloromethane	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Chloroform	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
1,1,1-Trichloroethane	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Carbon tetrachloride	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
1,1-Dichloropropene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Benzene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB

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Certificate of Analysis

Final Report

Laboratory Order ID 07040282

Client Name: Schnabel Engineering South, LLC
1 West Cary Street
Richmond, VA 23220

Date Received: April 20, 2007
Date Issued: April 24, 2007

Submitted To: Steve Pond
Client Site I.D.: Former Via Systems

Project Number: NA
Purchase Order: NA

Sample I.D.: Trench 2 Comp / Laburnum Ave.
Date/Time Sampled 04/20/07 16:37

Laboratory Sample I.D.: 07040282-002

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
1,2-Dichloroethane	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Trichloroethylene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
1,2-Dichloropropane	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Dibromomethane	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Bromodichloromethane	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
cis-1,3-Dichloropropene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
4-Methyl-2-pentanone (MIBK)	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Toluene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
trans-1,3-Dichloropropene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
1,1,2-Trichloroethane	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Tetrachloroethylene (PCE)	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
1,3-Dichloropropane	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
2-Hexanone (MBK)	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Dibromochloromethane	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
1,2-Dibromoethane (EDB)	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Chlorobenzene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
1,1,1,2-Tetrachloroethane	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Ethylbenzene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
m,p-Xylenes	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
o-Xylene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Xylenes, Total	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Styrene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Bromoform	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Isopropylbenzene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Bromobenzene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
1,1,2,2-Tetrachloroethane	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
1,2,3-Trichloropropane	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
n-Propylbenzene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
2-Chlorotoluene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
4-Chlorotoluene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
1,3,5-Trimethylbenzene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
tert-Butylbenzene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB

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Certificate of Analysis

Final Report

Laboratory Order ID 07040282

Client Name: Schnabel Engineering South, LLC
1 West Cary Street
Richmond, VA 23220

Date Received: April 20, 2007
Date Issued: April 24, 2007

Submitted To: Steve Pond
Project Number: NA

Client Site I.D.: Former Via Systems
Purchase Order: NA

Sample I.D.: Trench 2 Comp / Laburnum Ave.
Laboratory Sample I.D.: 07040282-002
Date/Time Sampled 04/20/07 16:37

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
1,2,4-Trimethylbenzene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
sec-Butylbenzene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
1,3-Dichlorobenzene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
p-Isopropyltoluene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
1,4-Dichlorobenzene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
1,2-Dichlorobenzene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
n-Butylbenzene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
1,2-Dibromo-3-chloropropane (DBCP)	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
1,2,4-Trichlorobenzene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Hexachlorobutadiene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Naphthalene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
1,2,3-Trichlorobenzene	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
MTBE	SW8260B	< 72.9 ug/kg	72.9	04/23/07 16:32	DMB
Percent Moisture	SM2540G	31.4 %	0.1	04/23/07 10:35	TER

Results have been calculated on a dry weight basis.

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Certificate of Analysis

Final Report

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Client Name: Schnabel Engineering South, LLC
1 West Cary Street
Richmond, VA 23220

Date Received: April 20, 2007
Date Issued: April 24, 2007

Submitted To: Steve Pond
Project Number: NA

Client Site I.D.: Former Via Systems
Purchase Order: NA

Sample I.D.: Trench 3 Comp / Laburnum Ave.
Laboratory Sample I.D.: 07040282-004
Date/Time Sampled 04/20/07 15:40

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
Arsenic	SW6010B	3.31 mg/kg	0.688	04/24/07 11:03	DMH
Barium	SW6010B	57.1 mg/kg	0.688	04/24/07 11:03	DMH
Cadmium	SW6010B	4.92 mg/kg	0.688	04/24/07 11:03	DMH
Chromium	SW6010B	57.9 mg/kg	0.688	04/24/07 11:03	DMH
Lead	SW6010B	306 mg/kg	0.688	04/24/07 11:03	DMH
Mercury	SW7471A	0.152 mg/kg	0.011	04/23/07 14:42	CGT
Selenium	SW6010B	< 3.44 mg/kg	3.44	04/24/07 11:03	DMH
Silver	SW6010B	1.46 mg/kg	0.688	04/24/07 11:03	DMH
Dichlorodifluoromethane	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Chloromethane	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Vinyl chloride	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Bromomethane	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Chloroethane	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Trichlorofluoromethane	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
1,1-Dichloroethylene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Acetone	SW8260B	203 ug/kg	68.8	04/23/07 17:24	DMB
Iodomethane	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Carbon disulfide	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Methylene chloride	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
trans-1,2-Dichloroethylene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
1,1-Dichloroethane	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Vinyl acetate	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
2,2-Dichloropropane	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
cis-1,2-Dichloroethylene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
2-Butanone (MEK)	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Bromochloromethane	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Chloroform	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
1,1,1-Trichloroethane	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Carbon tetrachloride	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
1,1-Dichloropropene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Benzene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB

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Final Report

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Client Name: Schnabel Engineering South, LLC
1 West Cary Street
Richmond, VA 23220

Date Received: April 20, 2007
Date Issued: April 24, 2007

Submitted To: Steve Pond
Client Site I.D.: Former Via Systems

Project Number: NA
Purchase Order: NA

Sample I.D.: Trench 3 Comp / Laburnum Ave.
Date/Time Sampled 04/20/07 15:40

Laboratory Sample I.D.: 07040282-004

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
1,2-Dichloroethane	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Trichloroethylene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
1,2-Dichloropropane	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Dibromomethane	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Bromodichloromethane	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
cis-1,3-Dichloropropene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
4-Methyl-2-pentanone (MIBK)	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Toluene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
trans-1,3-Dichloropropene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
1,1,2-Trichloroethane	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Tetrachloroethylene (PCE)	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
1,3-Dichloropropane	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
2-Hexanone (MBK)	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Dibromochloromethane	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
1,2-Dibromoethane (EDB)	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Chlorobenzene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
1,1,1,2-Tetrachloroethane	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Ethylbenzene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
m,p-Xylenes	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
o-Xylene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Xylenes, Total	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Styrene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Bromoform	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Isopropylbenzene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Bromobenzene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
1,1,2,2-Tetrachloroethane	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
1,2,3-Trichloropropane	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
n-Propylbenzene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
2-Chlorotoluene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
4-Chlorotoluene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
1,3,5-Trimethylbenzene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
tert-Butylbenzene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB

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Laboratory Sample I.D.: 07040282-004
Date/Time Sampled 04/20/07 15:40

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
1,2,4-Trimethylbenzene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
sec-Butylbenzene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
1,3-Dichlorobenzene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
p-Isopropyltoluene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
1,4-Dichlorobenzene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
1,2-Dichlorobenzene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
n-Butylbenzene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
1,2-Dibromo-3-chloropropane (DBCP)	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
1,2,4-Trichlorobenzene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Hexachlorobutadiene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Naphthalene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
1,2,3-Trichlorobenzene	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
MTBE	SW8260B	< 68.8 ug/kg	68.8	04/23/07 17:24	DMB
Percent Moisture	SM2540G	27.3 %	0.1	04/23/07 10:35	TER

Results have been calculated on a dry weight basis.

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Purchase Order: NA

Sample I.D.: Staging 1 Comp / Laburnum Ave.
Date/Time Sampled 04/20/07 15:50

Laboratory Sample I.D.: 07040282-003

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
Arsenic	SW6010B	1.17 mg/kg	0.759	04/24/07 10:57	DMH
Barium	SW6010B	57.9 mg/kg	0.759	04/24/07 10:57	DMH
Cadmium	SW6010B	1.81 mg/kg	0.759	04/24/07 10:57	DMH
Chromium	SW6010B	25.4 mg/kg	0.759	04/24/07 10:57	DMH
Lead	SW6010B	96.3 mg/kg	0.759	04/24/07 10:57	DMH
Mercury	SW7471A	0.031 mg/kg	0.012	04/23/07 14:40	CGT
Selenium	SW6010B	< 3.8 mg/kg	3.80	04/24/07 10:57	DMH
Silver	SW6010B	< 0.759 mg/kg	0.759	04/24/07 10:57	DMH
Dichlorodifluoromethane	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Chloromethane	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Vinyl chloride	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Bromomethane	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Chloroethane	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Trichlorofluoromethane	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
1,1-Dichloroethylene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Acetone	SW8260B	133 ug/kg	75.9	04/23/07 16:58	DMB
Iodomethane	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Carbon disulfide	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Methylene chloride	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
trans-1,2-Dichloroethylene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
1,1-Dichloroethane	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Vinyl acetate	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
2,2-Dichloropropane	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
cis-1,2-Dichloroethylene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
2-Butanone (MEK)	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Bromochloromethane	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Chloroform	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
1,1,1-Trichloroethane	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Carbon tetrachloride	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
1,1-Dichloropropene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Benzene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB

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Purchase Order: NA

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Laboratory Sample I.D.: 07040282-003
Date/Time Sampled 04/20/07 15:50

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
1,2-Dichloroethane	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Trichloroethylene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
1,2-Dichloropropane	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Dibromomethane	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Bromodichloromethane	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
cis-1,3-Dichloropropene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
4-Methyl-2-pentanone (MIBK)	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Toluene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
trans-1,3-Dichloropropene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
1,1,2-Trichloroethane	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Tetrachloroethylene (PCE)	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
1,3-Dichloropropane	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
2-Hexanone (MBK)	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Dibromochloromethane	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
1,2-Dibromoethane (EDB)	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Chlorobenzene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
1,1,1,2-Tetrachloroethane	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Ethylbenzene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
m,p-Xylenes	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
o-Xylene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Xylenes, Total	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Styrene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Bromoform	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Isopropylbenzene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Bromobenzene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
1,1,2,2-Tetrachloroethane	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
1,2,3-Trichloropropane	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
n-Propylbenzene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
2-Chlorotoluene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
4-Chlorotoluene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
1,3,5-Trimethylbenzene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
tert-Butylbenzene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB

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Sample I.D.: Staging 1 Comp / Laburnum Ave.
Laboratory Sample I.D.: 07040282-003
Date/Time Sampled 04/20/07 15:50

Parameter	Method	Sample Results	LOQ	Analysis Date/Time	Analyst
1,2,4-Trimethylbenzene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
sec-Butylbenzene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
1,3-Dichlorobenzene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
p-Isopropyltoluene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
1,4-Dichlorobenzene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
1,2-Dichlorobenzene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
n-Butylbenzene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
1,2-Dibromo-3-chloropropane (DBCP)	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
1,2,4-Trichlorobenzene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Hexachlorobutadiene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Naphthalene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
1,2,3-Trichlorobenzene	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
MTBE	SW8260B	< 75.9 ug/kg	75.9	04/23/07 16:58	DMB
Percent Moisture	SM2540G	34.2 %	0.1	04/23/07 10:35	TER

Results have been calculated on a dry weight basis.

APPENDIX G
WORK PLAN FOR REMOVAL OF PROCESS PIPING – EARTH TECH

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Work Plan for Removal of Process Piping from Concrete Pipe Trenches and Staging Area

Former Viasystems Facility

Submitted to:
USEPA, Region III
Hazardous Site Cleanup Division
1650 Arch Street
Philadelphia, Pennsylvania 19103

Prepared for:
Forest City Commercial Construction
4500 South Laburnum Avenue
Richmond, Virginia 23231

Prepared by:
Earth Tech, Inc.
7870 Villa Park Drive, Suite 400
Richmond, Virginia 23228

July 19, 2007

Earth Tech Project No. 96095

Table of Contents

Tables

Appendices

1.0 INTRODUCTION AND BACKGROUND

This Work Plan has been prepared by Earth Tech, Inc., on behalf of Forest City Commercial Construction, to describe activities related to the removal and disposal of contaminated process pipes from the concrete pipe trenches and staging area at the former Viasystems Laburnum Avenue facility in Richmond, Virginia.

Process piping between the former production building and the former on-site wastewater treatment facility (WWTF) is contained within a series of subsurface concrete pipe trenches. In most areas, these trenches are covered with corrugated steel that will be removed to provide access to the piping within the trenches. These trenches are shown on the enclosed site plan (Appendix A) and designated as follows:

1. Trench 1 – Approximately 120 feet long, directly adjacent to the WWTF and parallel to the access road. The groundwater treatment system (GWTS) release that occurred on April 14, 2007, occurred within this trench, and some of the process piping was damaged in this area.
2. Trench 2 – Runs approximately 160 feet from Trench 1 towards the southwest, parallel to the access road. The majority of the process piping in this area was removed during the release activities on April 14 and stockpiled in the staging area, and the trench walls were partially demolished in this area.
3. Trench 3 – Perpendicular to the southwest end of Trench 2, runs approximately 160 feet under the access road to the tunnel where Trench 4 starts. Nearly all of the process piping was removed from this area on April 14 (stockpiled in the staging area), and the trench walls were demolished between the road and the tunnel.
4. Trench 4 – Starts at the tunnel at the end of Trench 3 and runs approximately 250 feet into the former manufacturing building. Some damage to the process pipes has been observed in this area. The concrete and steel coverings for this trench have not yet been demolished.
5. Trench 5 – Runs approximately 100 feet from Trench 2 to the wastewater containment structure Tank 3. Process piping and trench walls were damaged and remain in place in this area.
6. Trench 6 – Runs approximately 500 feet between the northeastern side of the manufacturing building and the access road adjacent to the WWTF (goes under Building 46). The piping in this trench is undisturbed; this area was isolated from and not impacted by the April 14 release.

In May 2006, Earth Tech investigated the process piping that remained within the pipe trenches after Viasystems decommissioned the manufacturing facility. Lines were cut and/or broken in order to inspect the interior for sediment/residue. Seven of the pipes were observed to contain approximately ⅛-inch to ½-inch of sediment; samples were obtained of this sediment and analyzed for Resource Conservation and Recovery Act (RCRA) metals for characterization and disposal purposes. Based on the analytical results as summarized in Appendix B, these seven pipes contain metallic residue and thus will be removed, contained, and disposed of by a qualified environmental contractor as described in this Work Plan prior to full-scale demolition of the pipe trenches. The table below provides details of the trenches and the process piping containing sediments that remains within each trench:

Table 1 Trenches and Process Piping

Trench Designation	Total Length	Width	Depth	Current Condition	Process Pipes w/Sediments within Trench		
					Line #	Size & Mat'l	Marking (Process Use)
Trench 1	120'	21'	5 - 12'	Pipes partially demolished and Trench impacted by release	42	10" Steel	Dilute Acid/Alkali Rinse from Chemical Processes
Trench 2	160'	21'	6'	Pipes demolished and Trench partially demolished; impacted by release	42	2 Parallel 10" Steel Pipes	Dilute Acid/Alkali Rinse from Chemical Processes
Trench 3	160'	12'	4 – 5'	Pipes removed and Trench walls demolished; impacted by release	42	2 Parallel 10" Steel Pipes	Dilute Acid/Alkali Rinse from Chemical Processes
Trench 4	250'	12'	7 – 8'	Trench intact, pipes damaged in places	42	2 Parallel 10" Fiberglass Pipes w/PVC sections	Dilute Acid/Alkali Rinse from Chemical Processes
Trench 5	100'	10'	6'	Pipes and Trench partially demolished and impacted by release	42	10" Steel	Dilute Acid/Alkali Rinse from Chemical Processes
Trench 6	500'	12'	5 - 15'	Pipes and Trench remain intact; not impacted by release	141	4" PVC	Chrome Solutions
					142	10" Steel	Dilute Acid/Alkali Rinse from Chemical Processes
					144	6" Steel	Aqueous Developers, Strippers, and their rinses
					149	6" Steel	Aqueous Developers, Strippers, and their rinses
Buried Pipe	100'	N/A	N/A	Buried pipe under access road between Trenches 2 and 3	N/A	10" Steel	N/A

This Work Plan addresses the sections of former process piping that are documented to contain sediment, including piping that remains intact in the trenches, piping that was damaged and/or partially demolished on April 14 and remains within the trenches, and piping that was placed in the staging area (see drawing in Appendix A) after being demolished on April 14. Characterization and disposal of the piping that was damaged and/or removed on April 14 is also addressed in the Sediment Management Work Plan prepared by Partners Environmental Consulting, Inc., which incorporates the procedures described herein.

In addition to the piping within the trenches, a section of subsurface (buried) process piping runs under the access road from Trench 3 to Trench 2 (see drawing in Appendix A). This piping was observed to contain sediment and was sampled in May 2006 (results in Appendix B), and thus will be removed in accordance with this work plan.

Piping within the trenches that has been investigated and observed as not containing sediment will be demolished under the OSHA 29 CFR 1926 Construction Standards and disposed and/or recycled in accordance with standard demolition practices.

2.0 PURPOSE AND SCOPE OF WORK

The analytical results summarized in Appendix B show that the pipes are non-hazardous for disposal purposes, as all parameters are below toxicity characteristic leaching procedure (TCLP) limits for the contaminants listed in 40 CFR 261.24, Table 1. However, due to the elevated levels of lead, chromium, barium, silver, arsenic, chromium, and mercury in the residues, the removal and handling of this piping involves the potential exposure of workers to hazardous substances. These procedures are subject to both

29 CFR 1910.120 (OSHA standards for hazardous waste operations - HAZWOPER) and 29 CFR 1926.62 (OSHA standards for occupational exposure to lead). Although the residue is not considered hazardous waste for disposal purposes (relative to TCLP results), the referenced substances are considered hazardous substances under 40 CFR 302.4. Due to the elevated contaminant levels and the potential for worker exposure during demolition and handling procedures, the workers are subject to training requirements (HAZWOPER), air monitoring, and medical monitoring procedures under the regulations referenced above. In order for the work to proceed in a safe and compliant manner, these pipes will be removed by properly trained and medically cleared personnel. After the subject piping has been safely removed, the remainder of the demolition will be performed under the OSHA 29 CFR 1926 Construction Standards (not OSHA environmental standards).

This Work Plan outlines the means and methods to safely and properly remove, contain, stage, and perform off-site disposal of the process pipe containing metallic sediments. The proposed scope under this Work Plan includes the following tasks:

- Prepare a site-specific Health and Safety Plan (HASP) addendum to effectively manage the risk(s) during the specific requirements of the pipe removal work.
- Prepare the trenches for safe removal of the former process piping (remove covers and place plastic sheeting below the pipes).
- Systematically cut and contain/seal piping in 5- to 6-foot lengths.
- Remove the piping from the trenches and staging area and place in lined rolloff boxes.
- Secure, stage, and label rolloff boxes until removed from the site for disposal.
- Transport and dispose of all removed piping at an approved off-site landfill. Manifests will be signed by an authorized representative of Laburnum Investment, LLC.
- Earth Tech will prepare a final report describing quantity and methods of disposal, including disposal documentation.

The specifics of each of these activities are described in Section 3.0.

3.0 WORK ACTIVITIES

3.1 Health and Safety Plan Preparation

Prior to initiating any work related to the removal of the contaminated process piping, the contractor will prepare and submit an addendum to the HASP. This addendum will be reviewed and approved by Earth Tech prior to the work commencing. The HASP addendum will include the following requirements:

- All work shall be performed in accordance with 29 CFR 1910.120; 29 CFR 1926.62; and applicable provisions of the Construction Standards identified in 29 CFR 1926 (e.g., Excavation .650-.652).
- Earth Tech will provide an owner's representative to oversee all aspects of this work (Project Manager with a minimum of 15 years of experience managing and performing removal and remediation activities on hazardous sites).

- The contractor will provide a full-time supervisor to oversee the field crew at all times during the performance of this work (minimum of 10 years of environmental remediation management experience).
- All personnel involved in the removal and containment of the contaminated piping shall demonstrate that they have received 40-hour HAZWOPER training and are current on their annual 8-hour HAZWOPER refresher and medical surveillance requirements. Training certificates shall be provided to the Earth Tech supervisor. The only exception to this requirement may be for the equipment operator, as long as he/she remains within the closed cab of the equipment.
- Personnel will initially be equipped in modified Level D personnel protective equipment (PPE), including hard hats, safety glasses (ANSI Z-87 with sideshields), protective gloves, safety-toe boots with booties, and Tyvek or other protective coverall.
- Personnel performing cutting of PVC piping using band saws or other hand tools will be upgraded to modified Level C PPE, which will include a full-face air purifying respirator (NIOSH approved) with HEPA-type particulate filter cartridges, in addition to the Level D PPE specified above.
- Air monitoring will be performed by Earth Tech to verify the safe working conditions of the workers within and around the trenches. During the initial cutting operation, a representative sample of the air in the trench at the breathing area (personal) will be obtained and sent to a local laboratory for airborne lead analysis. At the same time, a direct reading air sampling unit (mini-ram type) will be used to obtain real-time particulate data for comparison to the lead laboratory sample and to be used for baseline purposes. The mini-ram readings will be calibrated to the lead laboratory data and used as a baseline indicator. If the laboratory data indicates lead or other particulate readings above applicable action levels, the PPE ensemble will be reevaluated to determine whether an upgrade to respirators will be necessary, and additional engineering controls will be employed as needed. Air monitoring strategies and review of data will be reviewed and approved by a Certified Industrial Hygienist (CIH).
- The mini-ram will continue to be employed in the breathing zone area for the duration of the work. If at any time readings indicate a potential for elevated lead or other particulate levels, PPE will be evaluated and upgraded as necessary.

3.2 Trench Preparation

The following procedures will be performed to prepare the areas for safe pipe removal:

- Corrugated steel covers, concrete blocks/pavers, and other coverings located above the trenches will be carefully and systematically removed in order to safely access the piping within the trenches.
- Once the covers have been removed, ladders will be required to be used for personnel access into and out of the trenches. Ladders must be extension-type (not step ladders), appropriately sized for the depth of the trench, and properly secured. Ladder requirements and procedures must be included in the HASP addendum.
- 6-mil polyethylene sheeting will be placed on the floor of the trench under the sections of piping that are actively being removed, in order to provide containment for any sediment that may be released during cutting/shearing activities.

- Conveyance piping from extraction wells to the groundwater treatment system (GWTS) may remain active in several of the trenches while the pipe removal is being performed. This piping will be marked using bright orange spray paint and avoided at all times during the progress of the work. The Earth Tech supervisor will ensure that the GWTS remains protected and will direct the deployment of additional physical protective measures if he feels that they are necessary during the progress of the work.
- Any excavation activities will be reviewed and approved by a competent person per 29 CFR 1926.650-.652. The competent person will also evaluate the excavation and related personnel activities inside the trench to determine if provisions(s) of the Confined Space Standard 29 CFR 1910.146 apply to the identified activities. This information will be submitted to the Earth Tech supervisor prior to starting the excavation work.

3.3 Pipe Cutting and Sealing

The steel piping will be cut using excavator-mounted shears, and the fiberglass/PVC piping will be cut using a band saw or other similar method. Cutting torches or other high-heat producing methods will not be used. Hand tools may also be used where shears are unable to safely cut the steel piping; specific methods will be approved by the Earth Tech supervisor. All cutting will be performed with care to minimize the disturbance of the sediments within the piping.

Pipes will be cut into 5- to 6-foot sections to allow for safe removal from the trenches as well as facilitate staging within the rolloff boxes for proper disposal. The ends of the pipes will be sealed prior to being removed from the trenches to contain the sediments during removal and loading. Cutting and sealing of intact piping will be systematically performed as follows:

- The intact piping will be initially cut in two places 5 to 6 feet apart.
- Personnel will enter the trench and seal the four exposed ends of piping from the two cuts using 6-mil polyethylene and duct tape. Duct tape will be applied to sharp edges of the piping to protect the bags.
- Personnel will then exit the trench or move a safe distance away from the work area (minimum of 20 feet).
- An excavator and/or shears will be used to lift the length of pipe out of the trench and place it directly into a lined rolloff box.
- The shears will make another cut in the pipe 5 to 6 feet away from the first cut.
- Sealing, removal, and cutting will systematically proceed to the end of the section of pipe.
- As the cutting/removal area progresses down the trench, the protective poly sheeting will be moved to maintain a protective layer under the active work area. If any sediment is collected on the poly sheeting, a 55-gallon drum within the trench will be used to contain the residue. Debris contained within this drum will be disposed of along with the piping.

Cutting and removal of piping within the trenches that was previously partially demolished will be performed in a similar manner, with exposed ends sealed prior to handling/removal.

For the piping that is currently stockpiled in the staging area, the following procedures will be followed:

- The polyethylene bags that were previously placed on the ends of the piping will be covered with new 6-mil polyethylene bags or sheeting and sealed with duct tape. Duct tape will be applied to sharp edges of the piping to protect the bags.
- New 6-mil polyethylene sheeting will be placed adjacent to the piping within the fenced staging area to be used as an additional containment area during cutting and loading activities.
- The piping is currently staged in approximately 12- to 20-foot long sections. Excavator-mounted shears will be used to cut each section in 5- to 6-foot lengths to facilitate safe and efficient loading and storage within the rolloff boxes. Shearing operations will be performed above the poly-lined staging area to provide additional containment.
- As each section of pipe is cut, personnel will seal the exposed ends with 6-mil polyethylene bags and duct tape.
- After each 5- to 6-foot section has been properly sealed on both ends, an excavator and/or shears will be used to place the pipe into a lined rolloff box.
- If any sediment is collected on the poly sheeting, a 55-gallon drum within the trench will be used to contain the residue. Debris contained within this drum will be disposed of along with the piping.
- In accordance with the Sediment Management Work Plan, after the pipes have been removed from the staging area, the top 6 inches of soil will be excavated, placed in a rolloff, sampled, and disposed of appropriately.

3.4 Pipe Containment and Staging

All removed piping will be contained in lined rolloff boxes suitable for offsite transit to an approved disposal facility. As described in Section 4.0, piping removed during Phase I will remain onsite until receipt of U.S. Environmental Protection Agency (EPA) approval of the related Sediment Management Work Plan. After loading, these boxes will be relocated to an approved staging area elsewhere on the site, covered, and properly labeled until they can be shipped.

Phase II pipe removal will be performed only after EPA approval of the Sediment Management Work Plan. It is intended to ship the Phase II waste as it is generated, but if transportation and disposal (T&D) coordination does not allow this to occur, the boxes will be relocated to an approved staging area elsewhere on the site, covered, and properly labeled until they can be shipped.

3.5 Transportation and Disposal

The analytical results summarized in Appendix B show that the pipes are non-hazardous for disposal purposes, as all parameters are below TCLP limits for hazardous substances. Based on this, the rolloffs are anticipated to be transported to a pre-approved licensed Subtitle D waste disposal facility. All manifests will be signed by a designated representative of Laburnum Investments, LLC.

3.6 Reporting and Documentation

After all of the work described within this Work Plan has been completed, Earth Tech will prepare a final report describing quantity and methods of disposal, including disposal documentation. This report will be submitted to USEPA as part of the closure report for the releases.

4.0 WORK SCHEDULE

4.1 Phase I – Removal of Non-Impacted Piping from Trench 6

Trench 6 was not impacted by the release that occurred on April 14, 2007, and is isolated from the impacted trenches by a knee wall on the northern side of the access road, as well as physically separated from the impacted areas by the access road. Therefore, the contaminated piping from this trench is anticipated to be removed during the week of July 30, 2007, in accordance with the provisions of this Work Plan. The line of demarcation for this first phase of contaminated process piping removal will be immediately to the southeast of the access road, as shown in the Partial Site Plan located in Appendix A.

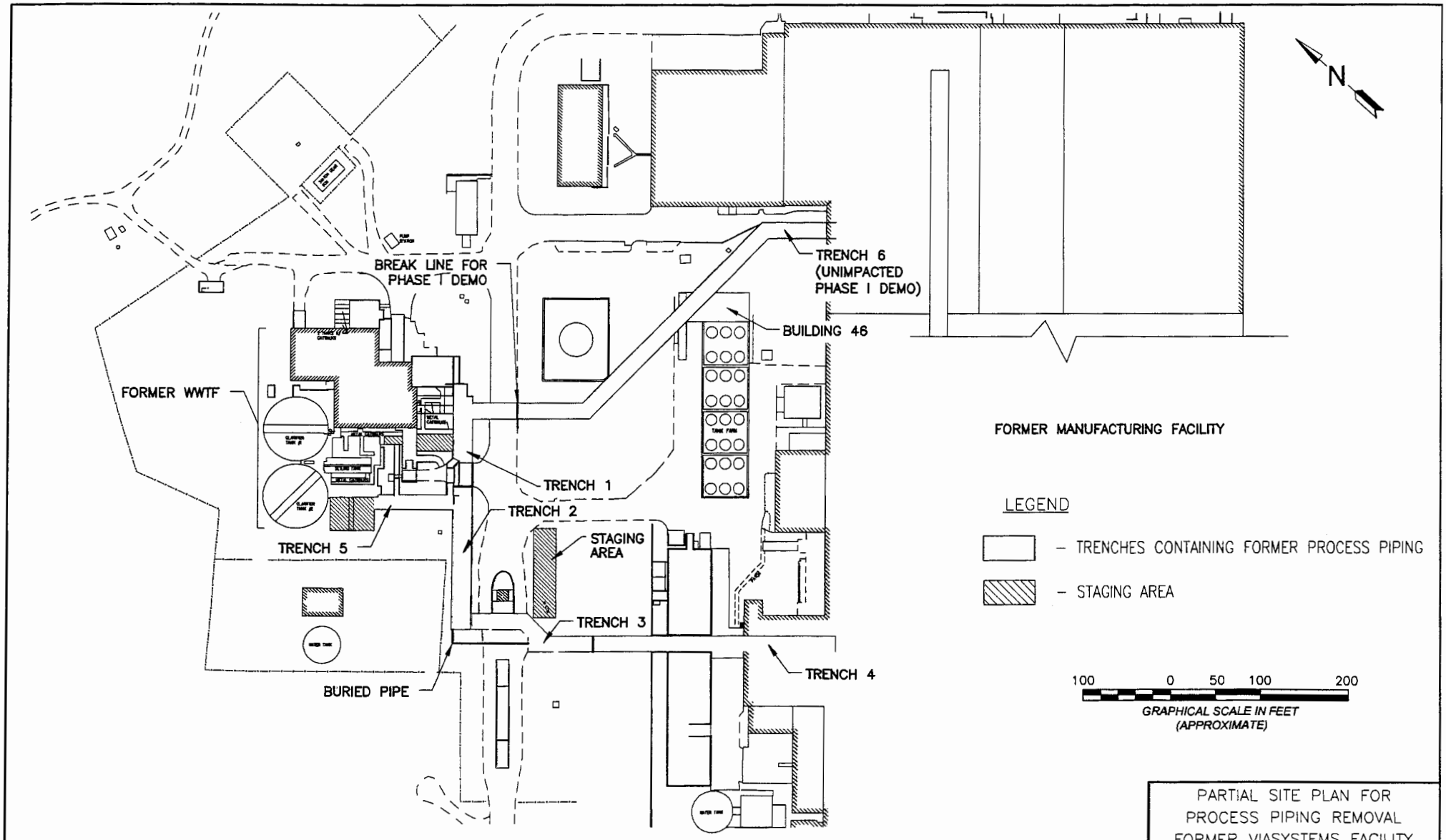
4.2 Phase II – Removal of Impacted Piping from Trenches and Staging Area

Piping that remains within the other five trenches was partially demolished during the April 14 activities, and as such this piping is addressed under the Sediment Management Work Plan prepared by Partners. The piping that was removed and placed in the staging area on April 14 is also addressed in the Sediment Management Work Plan. Therefore, none of this impacted piping will be removed or disposed until EPA approval of the Sediment Management Work Plan.

Appendices

Appendix A

Partial Site Plan



PARTIAL SITE PLAN FOR
PROCESS PIPING REMOVAL
FORMER VIASYSTEMS FACILITY
RICHMOND, VIRGINIA

DATE JUL-07	EarthTech	FIGURE
PROJECT NO. 96095	A Tyco International Ltd. Company	1

Appendix B

Analytical Results Summary Table

Viasystems Richmond Works
Pipe Testing - May 2006

Pipe ID	Line Size (inches)	Former Use	Parameter	RCRA Limit mg/kg	Results (Total metals) mg/kg	Results (TCLP metals) mg/kg
141 East	4	Chrome Solutions	pH (field)	<2 or >12	pH 5 - 8	
			Arsenic	5.0	BDL	BDL
			Barium	100.0	530	1.97
			Cadmium	1.0	BDL	BDL
			Chromium	5.0	260	BDL
			Lead	5.0	BDL	BDL
			Mercury	0.2	BDL	BDL
			Selenium	1.0	BDL	BDL
			Silver	5.0	BDL	BDL
142 East	10	Dilute acid/ alkali rinse from chemical processes	pH (field)	<2 or >12	pH 5 - 8	
			Arsenic	5.0	BDL	BDL
			Barium	100.0	BDL	BDL
			Cadmium	1.0	BDL	BDL
			Chromium	5.0	140	BDL
			Lead	5.0	9400	BDL
			Mercury	0.2	BDL	BDL
			Selenium	1.0	BDL	BDL
			Silver	5.0	BDL	BDL
144 East	6	Aqueous developers, strippers and their rinses	pH (field)	<2 or >12	pH 5 - 8	
			Arsenic	5.0	BDL	BDL
			Barium	100.0	360	BDL
			Cadmium	1.0	BDL	BDL
			Chromium	5.0	7.1	BDL
			Lead	5.0	160	BDL
			Mercury	0.2	BDL	BDL
			Selenium	1.0	BDL	BDL
			Silver	5.0	BDL	BDL
149 East	6	Aqueous developers, strippers and their rinses	pH (field)	<2 or >12	pH 5 - 8	
			Arsenic	5.0	BDL	BDL
			Barium	100.0	3800	9.11
			Cadmium	1.0	BDL	BDL
			Chromium	5.0	BDL	BDL
			Lead	5.0	BDL	BDL
			Mercury	0.2	0.194	BDL
			Selenium	1.0	BDL	BDL
			Silver	5.0	BDL	BDL
42 West	10	Dilute acid/ alkali rinse from chemical processes	pH (field)	<2 or >12	pH 5 - 8	
			Arsenic	5.0	BDL	BDL
			Barium	100.0	BDL	BDL
			Cadmium	1.0	BDL	BDL
			Chromium	5.0	150	BDL
			Lead	5.0	1300	BDL
			Mercury	0.2	BDL	BDL
			Selenium	1.0	BDL	BDL
			Silver	5.0	210	BDL
42 Northwest	10	Dilute acid/ alkali rinse from chemical processes	pH (field)	<2 or >12	pH 5 - 8	
			Arsenic	5.0	BDL	BDL
			Barium	100.0	110	BDL
			Cadmium	1.0	BDL	BDL
			Chromium	5.0	1600	BDL
			Lead	5.0	11000	BDL
			Mercury	0.2	0.449	BDL
			Selenium	1.0	96	BDL
			Silver	5.0	BDL	BDL
Buried pipe near old guard shack	10	Unknown	pH (field)	<2 or >12	pH 5 - 8	
			Arsenic	5.0	17	BDL
			Barium	100.0	18	BDL
			Cadmium	1.0	2.4	BDL
			Chromium	5.0	190	BDL
			Lead	5.0	22000	1.01
			Mercury	0.2	8.38	BDL
			Selenium	1.0	<2.5	BDL
			Silver	5.0	>5	BDL

APPENDIX H
PORTION OF 40 CFR 268.45 (CLEAN DEBRIS SURFACE)

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TABLE—WASTES EXCLUDED FROM THE TREATMENT STANDARDS UNDER § 268.40—Continued

Facility name[1] and address	Waste code	See also	Regulated hazardous constituent	Wastewaters		Nonwastewaters	
				Concentration (mg/l)	Notes	Concentration (mg/kg)	Notes
Dupont Environmental Treatment—Chambers Works Wastewater Treatment Plant, Deepwater, NJ[8].	K088	Standards under § 268.40.	Arsenic	1.4	NA	5.0 mg/L TCLP	NA
Guardian Industries Corp., Jefferson Hills, PA[6 11].	D010	Standards under § 268.40.	Selenium	NA	NA	39.4 mg/L TCLP	NA.
Owens Brockway Glass Container Company, Vernon CA[6 7].	D010	Standards under § 268.40.	Selenium	NA	NA	51 mg/L TCLP	NA.
Northwestern Plating Works, Inc., Chicago, IL.	F006	Table CCWE in 268.40.	Cyanides (Total).	1.2	([2] and [3])	970	([4])
			Cyanides (Amenable).	.86	([2])	30	([4])
			Cadmium	1.6		NA	
			Chromium ...	.32		NA	
			Lead	.040		NA	
			Nickel	.44		NA	
St. Gobain Containers, El Monte, CA[5 7].	D010	Standards under § 268.40.	Selenium	NA	NA	25 mg/L TCLP	NA.
U.S. Ecology Idaho, Incorporated, Grandview, Idaho.	K088[10]	Standards under § 268.40.	Arsenic	1.4	NA	5.0 mg/L TCLP	NA

([1])—A facility may certify compliance with these treatment standards according to provisions in 40 CFR 268.7.
([2])—Cyanide Wastewater Standards for F006 are based on analysis of composite samples.
([3])—These facilities must comply with 0.86 mg/l for amenable cyanides in the wastewater exiting the alkaline chlorination system. These facilities must also comply with 40 CFR § 268.7.a.4 for appropriate monitoring frequency consistent with the facilities' waste analysis plan.
([4])—Cyanide nonwastewaters are analyzed using SW–846 Method 9010 or 9012, sample size 10 grams, distillation time, 1 hour and 15 minutes.
([5])—Alternative D010 selenium standard only applies to dry scrubber solid from glass manufacturing wastes.
([6]) Alternative D010 selenium standard only applies to electrostatic precipitator dust generated during glass manufacturing operations.
([7]) D010 wastes generated by these two facilities must be treated by Chemical Waste Management, Inc. at their Kettleman Hills facility in Kettleman City, California.
([8]) Dupont Environmental Treatment–Chambers Works must dispose of this waste in their on–site Subtitle C hazardous waste landfill.
([9]) This treatment standerd applies only to K088-derived bag house dust, incinerator ash, and filtercake at this facility.
([10]) This treatment standard applies only to K088-derived air emission control dust generated by this facility.
([11]) D010 wastes generated by this facility must be treated by Heritage Environmental Services, LLC. at their treatment facility in Indianapolis, Indiana.

Note: NA means Not Applicable.

[51 FR 40642, Nov. 7, 1986, as amended at 52 FR 21017, June 4, 1987; 53 FR 31221, Aug. 17, 1988; 54 FR 36972, Sept. 6, 1989; 56 FR 12355, Mar. 25, 1991; 61 FR 55727, Oct. 28, 1996; 62 FR 26025, May 12, 1997; 62 FR 64509, Dec. 5, 1997; 63 FR 28738, May 26, 1998; 64 FR 28391, May 26, 1999; 66 FR 33890, June 26, 2001; 67 FR 35928, May 22, 2002; 67 FR 36818, May 28, 2002; 69 FR 6575, Feb. 11, 2004]

§ 268.45 Treatment standards for hazardous debris.

(a) *Treatment standards.* Hazardous debris must be treated prior to land disposal as follows unless EPA determines under § 261.3(f)(2) of this chapter that the debris is no longer contaminated with hazardous waste or the debris is treated to the waste-specific treatment standard provided in this subpart for the waste contaminating the debris:

(1) *General.* Hazardous debris must be treated for each "contaminant subject to treatment" defined by paragraph (b) of this section using the technology or technologies identified in Table 1 of this section.

(2) *Characteristic debris.* Hazardous debris that exhibits the characteristic of ignitability, corrosivity, or reactivity identified under §§ 261.21, 261.22, and 261.23 of this chapter, respectively, must be deactivated by treatment using one of the technologies identified in Table 1 of this section.

(3) *Mixtures of debris types.* The treatment standards of Table 1 in this section must be achieved for each type of debris contained in a mixture of debris types. If an immobilization technology

is used in a treatment train, it must be the last treatment technology used.

(4) *Mixtures of contaminant types.* Debris that is contaminated with two or more contaminants subject to treatment identified under paragraph (b) of this section must be treated for each contaminant using one or more treatment technologies identified in Table 1 of this section. If an immobilization technology is used in a treatment train, it must be the last treatment technology used.

(5) *Waste PCBs.* Hazardous debris that is also a waste PCB under 40 CFR part 761 is subject to the requirements of either 40 CFR part 761 or the requirements of this section, whichever are more stringent.

(b) *Contaminants subject to treatment.* Hazardous debris must be treated for each "contaminant subject to treatment." The contaminants subject to treatment must be determined as follows:

(1) *Toxicity characteristic debris.* The contaminants subject to treatment for debris that exhibits the Toxicity Characteristic (TC) by §261.24 of this chapter are those EP constituents for which the debris exhibits the TC toxicity characteristic.

(2) *Debris contaminated with listed waste.* The contaminants subject to treatment for debris that is contaminated with a prohibited listed hazardous waste are those constituents or wastes for which treatment standards are established for the waste under §268.40.

(3) *Cyanide reactive debris.* Hazardous debris that is reactive because of cyanide must be treated for cyanide.

(c) *Conditioned exclusion of treated debris.* Hazardous debris that has been treated using one of the specified extraction or destruction technologies in Table 1 of this section and that does not exhibit a characteristic of hazardous waste identified under subpart C, part 261, of this chapter after treatment is not a hazardous waste and need not be managed in a subtitle C facility. Hazardous debris contaminated with a listed waste that is treated by an immobilization technology specified in Table 1 is a hazardous waste and must be managed in a subtitle C facility.

(d) *Treatment residuals*—(1) *General requirements.* Except as provided by paragraphs (d)(2) and (d)(4) of this section:

(i) Residue from the treatment of hazardous debris must be separated from the treated debris using simple physical or mechanical means; and

(ii) Residue from the treatment of hazardous debris is subject to the waste-specific treatment standards provided by subpart D of this part for the waste contaminating the debris.

(2) *Nontoxic debris.* Residue from the deactivation of ignitable, corrosive, or reactive characteristic hazardous debris (other than cyanide-reactive) that is not contaminated with a contaminant subject to treatment defined by paragraph (b) of this section, must be deactivated prior to land disposal and is not subject to the waste-specific treatment standards of subpart D of this part.

(3) *Cyanide-reactive debris.* Residue from the treatment of debris that is reactive because of cyanide must meet the treatment standards for D003 in "Treatment Standards for Hazardous Wastes" at §268.40.

(4) *Ignitable nonwastewater residue.* Ignitable nonwastewaster residue containing equal to or greater than 10% total organic carbon is subject to the technology specified in the treatment standard for D001: Ignitable Liquids.

(5) *Residue from spalling.* Layers of debris removed by spalling are hazardous debris that remain subject to the treatment standards of this section.

TABLE 1—ALTERNATIVE TREATMENT STANDARDS FOR HAZARDOUS DEBRIS [1]

Technology description	Performance and/or design and operating standard	Contaminant restrictions [2]
A. Extraction Technologies:		
1. Physical Extraction		
a. *Abrasive Blasting:* Removal of contaminated debris surface layers using water and/or air pressure to propel a solid media (e.g., steel shot, aluminum oxide grit, plastic beads).	*Glass, Metal, Plastic, Rubber:* Treatment to a clean debris surface.[3]. *Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood:* Removal of at least 0.6 cm of the surface layer; treatment to a clean debris surface.[3]	*All Debris:* None.
b. *Scarification, Grinding, and Planing:* Process utilizing striking piston heads, saws, or rotating grinding wheels such that contaminated debris surface layers are removed.	Same as above	Same as above.
c. *Spalling:* Drilling or chipping holes at appropriate locations and depth in the contaminated debris surface and applying a tool which exerts a force on the sides of those holes such that the surface layer is removed. The surface layer removed remains hazardous debris subject to the debris treatment standards.	Same as above	Same as above.
d. *Vibratory Finishing:* Process utilizing scrubbing media, flushing fluid, and oscillating energy such that hazardous contaminants or contaminated debris surface layers are removed.[4]	Same as above	Same as above.
e. *High Pressure Steam and Water Sprays:* Application of water or steam sprays of sufficient temperature, pressure, residence time, agitation, surfactants, and detergents to remove hazardous contaminants from debris surfaces or to remove contaminated debris surface layers.	Same as above	Same as above.
2. Chemical Extraction		
a. *Water Washing and Spraying:* Application of water sprays or water baths of sufficient temperature, pressure, residence time, agitation, surfactants, acids, bases, and detergents to remove hazardous contaminants from debris surfaces and surface pores or to remove contaminated debris surface layers.	*All Debris:* Treatment to a clean debris surface.[3]; *Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood:* Debris must be no more than 1.2 cm (½ inch) in one dimension (i.e., thickness limit,[5] except that this thickness limit may be waived under an "Equivalent Technology" approval under § 268.42(b);[6] debris surfaces must be in contact with water solution for at least 15 minutes	*Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood:* Contaminant must be soluble to at least 5% by weight in water solution or 5% by weight in emulsion; if debris is contaminated with a dioxin-listed waste,[6] an "Equivalent Technology" approval under § 268.42(b) must be obtained.[6]
b. *Liquid Phase Solvent Extraction:* Removal of hazardous contaminants from debris surfaces and surface pores by applying a nonaqueous liquid or liquid solution which causes the hazardous contaminants to enter the liquid phase and be flushed away from the debris along with the liquid or liquid solution while using appropriate agitation, temperature, and residence time.[4]	Same as above	*Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood:* Same as above, except that contaminant must be soluble to at least 5% by weight in the solvent.
c. *Vapor Phase Solvent Extraction:* Application of an organic vapor using sufficient agitation, residence time, and temperature to cause hazardous contaminants on contaminated debris surfaces and surface pores to enter the vapor phase and be flushed away with the organic vapor.[4]	Same as above, except that brick, cloth, concrete, paper, pavement, rock and wood surfaces must be in contact with the organic vapor for at least 60 minutes.	Same as above.

TABLE 1—ALTERNATIVE TREATMENT STANDARDS FOR HAZARDOUS DEBRIS [1]—Continued

Technology description	Performance and/or design and operating standard	Contaminant restrictions [2]
3. Thermal Extraction		
a. *High Temperature Metals Recovery:* Application of sufficient heat, residence time, mixing, fluxing agents, and/or carbon in a smelting, melting, or refining furnace to separate metals from debris.	For refining furnaces, treated debris must be separated from treatment residuals using simple physical or mechanical means,[9] and, prior to further treatment, such residuals must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris.	*Debris contaminated with a dioxin-listed waste:*[5] Obtain an "Equivalent Technology" approval under § 268.42(b).[8]
b. *Thermal Desorption:* Heating in an enclosed chamber under either oxidizing or nonoxidizing atmospheres at sufficient temperature and residence time to vaporize hazardous contaminants from contaminated surfaces and surface pores and to remove the contaminants from the heating chamber in a gaseous exhaust gas.[7]	*All Debris:* Obtain an "Equivalent Technology" approval under § 268.42(b);[8] treated debris must be separated from treatment residuals using simple physical or mechanical means,[9] and, prior to further treatment, such residue must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris. *Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood:* Debris must be no more than 10 cm (4 inches) in one dimension (i.e., thickness limit),[5] except that this thickness limit may be waived under the "Equivalent Technology" approval	*All Debris:* Metals other than mercury.
B. Destruction Technologies:		
1. *Biological Destruction (Biodegradation):* Removal of hazardous contaminants from debris surfaces and surface pores in an aqueous solution and biodegration of organic or nonmetallic inorganic compounds (i.e., inorganics that contain phosphorus, nitrogen, or sulfur) in units operated under either aerobic or anaerobic conditions.	*All Debris:* Obtain an "Equivalent Technology" approval under § 268.42(b);[8] treated debris must be separated from treatment residuals using simple physical or mechanical means,[9] and, prior to further treatment, such residue must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris. *Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood:* Debris must be no more than 1.2 cm (½ inch) in one dimension (i.e., thickness limit),[5] except that this thickness limit may be waived under the "Equivalent Technology" approval	*All Debris:* Metal contaminants.
2. Chemical Destruction		
a. *Chemical Oxidation:* Chemical or electolytic oxidation utilizing the following oxidation reagents (or waste reagents) or combination of reagents—(1) hypochlorite (e.g., bleach); (2) chlorine; (3) chlorine dioxide; (4) ozone or UV (ultraviolet light) assisted ozone; (5) peroxides; (6) persulfates; (7) perchlorates; (8) perman-ganates; and/or (9) other oxidizing reagents of equivalent destruction efficiency.[4] Chemical oxidation specifically includes what is referred to as alkaline chlorination.	*All Debris:* Obtain an "Equivalent Technology" approval under § 268.42(b);[8] treated debris must be separated from treatment residuals using simple physical or mechanical means,[9] and, prior to further treatment, such residue must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris. *Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood:* Debris must be no more than 1.2 cm (½ inch) in one dimension (i.e., thickness limit),[5] except that this thickness limit may be waived under the "Equivalent Technology" approval	*All Debris:* Metal contaminants.

TABLE 1—ALTERNATIVE TREATMENT STANDARDS FOR HAZARDOUS DEBRIS [1]—Continued

Technology description	Performance and/or design and operating standard	Contaminant restrictions [2]
b. *Chemical Reduction:* Chemical reaction utilizing the following reducing reagents (or waste reagents) or combination of reagents: (1) sulfur dioxide; (2) sodium, potassium, or alkali salts of sulfites, bisulfites, and metabisulfites, and polyethylene glycols (e.g., NaPEG and KPEG); (3) sodium hydrosulfide; (4) ferrous salts; and/or (5) other reducing reagents of equivalent efficiency.[4]	Same as above	Same as above.
3. *Thermal Destruction:* Treatment in an incinerator operating in accordance with Subpart O of Parts 264 or 265 of this chapter; a boiler or industrial furnace operating in accordance with Subpart H of Part 266 of this chapter, or other thermal treatment unit operated in accordance with Subpart X, Part 264 of this chapter, or Subpart P, Part 265 of this chapter, but excluding for purposes of these debris treatment standards Thermal Desorption units.	Treated debris must be separated from treatment residuals using simple physical or mechanical means,[9] and, prior to further treatment, such residue must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris.	*Brick, Concrete, Glass, Metal, Pavement, Rock, Metal:* Metals other than mercury, except that there are no metal restrictions for vitrification. *Debris contaminated with a dioxin-listed waste.*[6] Obtain an "Equivalent Technology" approval under § 268.42(b),[8] except that this requirement does not apply to vitrification.
C. Immobilization Technologies:		
1. *Macroencapsulation:* Application of surface coating materials such as polymeric organics (e.g., resins and plastics) or use of a jacket of inert inorganic materials to substantially reduce surface exposure to potential leaching media.	Encapsulating material must completely encapsulate debris and be resistant to degradation by the debris and its contaminants and materials into which it may come into contact after placement (leachate, other waste, microbes).	None.
2. *Microencapsulation:* Stabilization of the debris with the following reagents (or waste reagents) such that the leachability of the hazardous contaminants is reduced: (1) Portland cement; or (2) lime/pozzolans (e.g., fly ash and cement kiln dust). Reagents (e.g., iron salts, silicates, and clays) may be added to enhance the set/cure time and/or compressive strength, or to reduce the leachability of the hazardous constituents.[5]	Leachability of the hazardous contaminants must be reduced.	None.
3. *Sealing:* Application of an appropriate material which adheres tightly to the debris surface to avoid exposure of the surface to potential leaching media. When necessary to effectively seal the surface, sealing entails pretreatment of the debris surface to remove foreign matter and to clean and roughen the surface. Sealing materials include epoxy, silicone, and urethane compounds, but paint may not be used as a sealant.	Sealing must avoid exposure of the debris surface to potential leaching media and sealant must be resistant to degradation by the debris and its contaminants and materials into which it may come into contact after placement (leachate, other waste, microbes).	None.

[1] Hazardous debris must be treated by either these standards or the waste-specific treatment standards for the waste contaminating the debris. The treatment standards must be met for each type of debris contained in a mixture of debris types, unless the debris is converted into treatment residue as a result of the treatment process. Debris treatment residuals are subject to the waste-specific treatment standards for the waste contaminating the debris.

[2] Contaminant restriction means that the technology is not BDAT for that contaminant. If debris containing a restricted contaminant is treated by the technology, the contaminant must be subsequently treated by a technology for which it is not restricted in order to be land disposed (and excluded from Subtitle C regulation).

[3] "Clean debris surface" means the surface, when viewed without magnification, shall be free of all visible contaminated soil and hazardous waste except that residual staining from soil and waste consisting of light shadows, slight streaks, or minor discolorations, and soil and waste in cracks, crevices, and pits may be present provided that such staining and waste and soil in cracks, crevices, and pits shall be limited to no more than 5% of each square inch of surface area.

[4] Acids, solvents, and chemical reagents may react with some debris and contaminants to form hazardous compounds. For example, acid washing of cyanide-contaminated debris could result in the formation of hydrogen cyanide. Some acids may also react violently with some debris and contaminants, depending on the concentration of the acid and the type of debris and contaminants. Debris treaters should refer to the safety precautions specified in Material Safety Data Sheets for various acids to avoid applying an incompatible acid to a particular debris/contaminant combination. For example, concentrated sulfuric acid may react violently with certain organic compounds, such as acrylonitrile.

[5] If reducing the particle size of debris to meet the treatment standards results in material that no longer meets the 60 mm minimum particle size limit for debris, such material is subject to the waste-specific treatment standards for the waste contaminating the material, unless the debris has been cleaned and separated from contaminated soil and waste prior to size reduction. At a minimum, simple physical or mechanical means must be used to provide such cleaning and separation of nondebris materials to ensure that the debris surface is free of caked soil, waste, or other nondebris material.

[6] Dioxin-listed wastes are EPA Hazardous Waste numbers FO20, FO21, FO22, FO23, FO26, and FO27.

[7] Thermal desorption is distinguished from Thermal Destruction in that the primary purpose of Thermal Desorption is to volatilize contaminants and to remove them from the treatment chamber for subsequent destruction or other treatment.

[8] The demonstration "Equivalent Technology" under § 268.42(b) must document that the technology treats contaminants subject to treatment to a level equivalent to that required by the performance and design and operating standards for other technologies in this table such that residual levels of hazardous contaminants will not pose a hazard to human health and the environment absent management controls.

[9] Any soil, waste, and other nondebris material that remains on the debris surface (or remains mixed with the debris) after treatment is considered a treatment residual that must be separated from the debris using, at a minimum, simple physical or mechanical means. Examples of simple physical or mechanical means are vibratory or trommel screening or water washing. The debris surface need not be cleaned to a "clean debris surface" as defined in note 3 when separating treated debris from residue; rather, the surface must be free of caked soil, waste, or other nondebris material. Treatment residuals are subject to the waste-specific treatment standards for the waste contaminating the debris.

[57 FR 37277, Aug. 18, 1992, as amended at 59 FR 48103, Sept. 19, 1994; 63 FR 28738, May 26, 1998]

§ 268.46 Alternative treatment standards based on HTMR.

For the treatment standards previously found in this section, refer to § 268.40.

[59 FR 48103, Sept. 19, 1994]

§ 268.48 Universal treatment standards.

(a) Table UTS identifies the hazardous constituents, along with the nonwastewater and wastewater treatment standard levels, that are used to regulate most prohibited hazardous wastes with numerical limits. For determining compliance with treatment standards for underlying hazardous constituents as defined in § 268.2(i), these treatment standards may not be exceeded. Compliance with these treatment standards is measured by an analysis of grab samples, unless otherwise noted in the following Table UTS.

UNIVERSAL TREATMENT STANDARDS

[Note: NA means not applicable]

Regulated constituent common name	CAS[1] number	Wastewater standard	Nonwastewater standard
		Concentration in mg/l[2]	Concentration in mg/kg[3] unless noted as "mg/l TCLP"
Organic Constituents			
Acenaphthylene	208-96-8	0.059	3.4
Acenaphthene	83-32-9	0.059	3.4
Acetone	67-64-1	0.28	160
Acetonitrile	75-05-8	5.6	38
Acetophenone	96-86-2	0.010	9.7
2-Acetylaminofluorene	53-96-3	0.059	140
Acrolein	107-02-8	0.29	NA
Acrylamide	79-06-1	19	23
Acrylonitrile	107-13-1	0.24	84
Aldicarb sulfone[8]	1646-88-4	0.056	0.28
Aldrin	309-00-2	0.021	0.066